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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,825	03/22/2004	Kishio Yokouchi	073338.0494	1490
5073	7590	03/11/2009	EXAMINER	
BAKER BOTTS L.L.P.			SONG, SARAH U	
2001 ROSS AVENUE				
SUITE 600			ART UNIT	
DALLAS, TX 75201-2980			PAPER NUMBER	
			2874	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/805,825	<b>Applicant(s)</b> YOKOUCHI, KISHIO	
	<b>Examiner</b> Sarah Song	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,8-12,33,36 and 39-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,8-12,33,36,39-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Applicant's communication filed on February 23, 2009 has been carefully considered and placed of record in the file. Claims 1 and 33 are amended. Claims 1, 5, 8-12, 33, 36 and 39-43 are pending.

2. The indicated allowability of previously pending claims 3 and 35 is withdrawn in view of the newly discovered applicability of the reference(s) to Kaneko (U.S. Patent Application Publication 2004/0156597). Rejections based on the newly cited reference(s) follow. Any inconvenience to the applicant is sincerely regretted.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 5, 8-12, 33, 36 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (U.S. Patent 5,835,646 previous relied upon) in view of Oh et al. (U.S. Patent 6,303,040 previously relied upon) and Kaneko (U.S. Patent Application Publication 2004/0156597 previously relied upon).**

5. Regarding claims 1 and 33, Yoshimura et al. discloses an apparatus for transmitting light (Figure 25) comprising: a first substrate/optical circuit board having a first surface including at least one optically active area; a second substrate having a second surface positioned in opposing spaced apart relationship from the first surface; wherein the second surface contains at least one second optically active area opposing the at least one first optically active area; where the second

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substrate is supported substantially by the first substrate; a polymer layer (photorefractive index polymer) disposed between the first and second substrate; a waveguide disposed within the polymer layer (the polymer material layer forms the waveguide) between the first and second optically active areas on the first and second surfaces; wherein the waveguide comprises a polymer core and a cladding for transmitting light therebetween (see column 11, lines 36-62).

6. Yoshimura et al. discloses fluorinated polymer waveguides (column 9, lines 26-27), but does not expressly disclose the first polymer to comprise a fluorinated polymer.

7. Oh et al. discloses that fluorinated polymers are advantageous for low loss at 1550 nm wavelength, commonly used in optical communications (column 3, lines 25-28).

8. One of ordinary skill in the art would have been motivated to provide a fluorinated polymer for the first polymer of Yoshimura et al. in order to provide a low loss device for efficient optical transmission. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a fluorinated first polymer in the device of Yoshimura et al. as taught by Oh et al.

9. Yoshimura et al. does not expressly disclose one or more additional structures embedded within said polymer layer disposed between said first and second substrates.

10. Kaneko discloses a connection structure wherein additional structures (e.g. wiring pattern 24 and soldering section 26) are embedded within the polymer layer 40. Kaneko discloses that embedding such structures provides the benefit of providing additional protection to said structures (§224).

11. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Yoshimura et al. such that one or more additional

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structures, such as the electrical connections shown in Figure 25, are embedded within the polymer layer in order to provide additional protection for those structures.

12. Regarding claims 5 and 36, Yoshimura et al. discloses at least one of the substrates comprising a plurality of optically active areas (see Figure 22a and 22b for example). It would have been additionally obvious to provide a plurality of optically active areas on both substrates by providing arrayed device substrates, thereby facilitating assembly by requiring only a single alignment step.

13. Regarding claims 8 and 39, Yoshimura et al. does not expressly disclose the claimed distance. However, it would have been within the level of ordinary skill in the art to determine an appropriate working distance between the substrates for optimal coupling. Therefore, the modification would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a distance in the claimed range since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See MPEP 2144.05(II)(A).

14. Regarding claims 9, 10, 12, 40, 41 and 43, Yoshimura does not expressly disclose the second substrate to be or comprise an IC, waveguide daughter board, or a semiconductor laser. However, selection of any optical substrate comprising an optically active area for input or output coupling would have been obvious as a matter of design choice.

15. Regarding claims 11 and 42, at least one of said optically active areas comprises a photodiode (PD).

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***Response to Arguments***

16. Applicant's arguments with respect to claims 1, 5, 8-12, 33, 36, 39-43 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarah Song/  
Primary Examiner, Art Unit 2874